Connecticut Department of Energy and Environmental Protection

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE Rule)

40 CFR 63 Subpart ZZZZ
Area Source Existing Emergency Compression Ignition Engine
≤500 Horsepower

Connecticut Department of Energy and Environmental Protection

To comply with this rule, you must meet the following standards:

Every 500 hours of operation or annually, whichever comes first, you must:

- Change oil and filter
  - Can utilize oil analysis program to extend specified oil change requirement
    - Oil analysis must be performed at the same frequency specified above.
    - Analysis program must at a minimum analyze: Total Base Number, viscosity, and percent water content.
    - Condemning limits for these parameters are: Total Base Number is <30% of the Total Base Number of the oil when new; viscosity of the oil has changed by >20% from the viscosity of the oil when new; or percent water content (by volume) is >0.5.
    - If all condemning limits are not exceeded you are not required to change the oil.
    - If any limits are exceeded, change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results are received, change the oil within 2 days or before commencing operation, whichever is later.
    - Keep records of the parameters analyzed, the results, and the oil changes.
    - Analysis program must be part of the engine maintenance plan.
- Inspect all hoses and belts and replace as necessary

To comply with this rule, you must meet the following standards:

Every 1,000 hours of operation or annually, whichever comes first, you must:

- Inspect air cleaner and replace as necessary

At all times you must operate/maintain all equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions.

To comply with this rule, you must meet the following standards:

- Starting in 2015, if you operate, or commit to operate, >15 hours annually as part of blackout and brownout prevention, also known as **emergency demand response, or operate for local reliability criteria:**
  - You will be required to use ultra low sulfur diesel (ULSD)
    - Engines located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, areas of Alaska that are not accessible by the Federal Aid Highway System, remote areas of Alaska, or on offshore vessels (that meet 63.6603(c)) are exempt from the requirements of this section.
  - You need to collect and submit an annual report including location, dates and times of operation (only if ≥100 HP).
    - First report must cover calendar year 2015 and is due March 31, 2016.
    - Submit electronically using the form in the Compliance and Emissions Data Reporting Interface that is accessed through EPA's Central Data Exchange at www.epa.gov/cdx.
- If you commit to run your engine ≤15 hours annually for emergency demand response and do not operate for local reliability, you don't have the ULSD and reporting requirements above.

Monitoring Requirements

Photo credit: EPA

•Operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

•Install a non-resettable hour meter if one is not already installed.

•Minimize the engine's time spent at idle during startup and minimize startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

Continuous Compliance Requirements

- No limit on hours of operation for emergency service (i.e. hurricane or ice storm)
- 100 hours/year allowed for:
  - –Maintenance and testing
  - –Emergency Demand Response (for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2); and
  - –Responding to situations when there is at least a 5% or more change in voltage.
  - –Operating for up to 50 hours to head off potential voltage collapse, or line overloads that could result in local or regional power disruption
    - Prior to May 3, 2014, the 50 hours can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a peak shaving (load management) program with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.
- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet all non-emergency engine requirements.
- Engines located in Connecticut must also meet State requirements for emergency engines.

CT Emergency Engine Requirements

According to Sec. 22a-174-22(a)(3) of the RCSA, "emergency engine" means a stationary reciprocating engine or a turbine engine which:

- Provides mechanical/electrical power only during periods of
  - testing and scheduled maintenance or
  - during an emergency or
  - in accordance with a contract ensuring electricity for use within the state of CT during an OP-4, Step 6 event
- Does not include an engine for which the owner/operator is party to any other agreement to sell electrical power from such engine to an electricity supplier, or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

Note: Engines operating under RCSA Sections 22a-174-3b and 3c must comply with additional requirements

Federal and CT Emergency Engine Requirements

Federal Only	Common to Both	State Only
•100 hr/yr limit: -Testing and maintenance checks -Readiness testing -Emergency demand response -Responding to a 5% or more change in voltage •50 hr/yr of the 100 hr/yr limit: -Non-emergencies with no financial arrangement -Local reliability criteria as described in the rule -Can be used for peak shaving at area sources until May 3, 2014	•Emergency hrs of operation: no limit (unless subject to 22a-174-3b or 3c)	•Only operate during emergencies, maintenance/scheduled testing, or during an OP-4, Step 6 event •Engine cannot be used as part of any other agreement or financial arrangement with another entity **If operating under RCSA Sec. 22a-174-3b:** •Emergency hrs of operation: 300 hr/yr limit •Any nongaseous fuel consumed by engine shall not exceed sulfur content of 0.0015%, dry basis **If operating under RCSA Sec. 22a-174-3c:** No restriction on hrs of use or fuel sulfur content, however total facility purchases of fuel are extremely limited

To demonstrate compliance with all rule requirements, keep records of:

- The maintenance conducted on the engine in order to demonstrate that you operated and maintained the engine and after-treatment control device (if any) according to your own maintenance plan.

- If the engine does not meet the standards applicable to non-emergency engines, you must record:
  - –Hours of operation using the non-resettable hour meter
  - –The number of hours used for emergency operation (including what classified the operation as emergency)
  - –The number of hours used for non-emergency operation
  - –Notification of the emergency situation and the time the engine was operated if the engine is used for demand response, periods where there is a deviation of voltage or frequency of 5% or greater below standard voltage or frequency, supplying power as part of a financial arrangement.

- Keep records for 5 years from the date of creation.

By when must I comply with the rule?

Your compliance date:

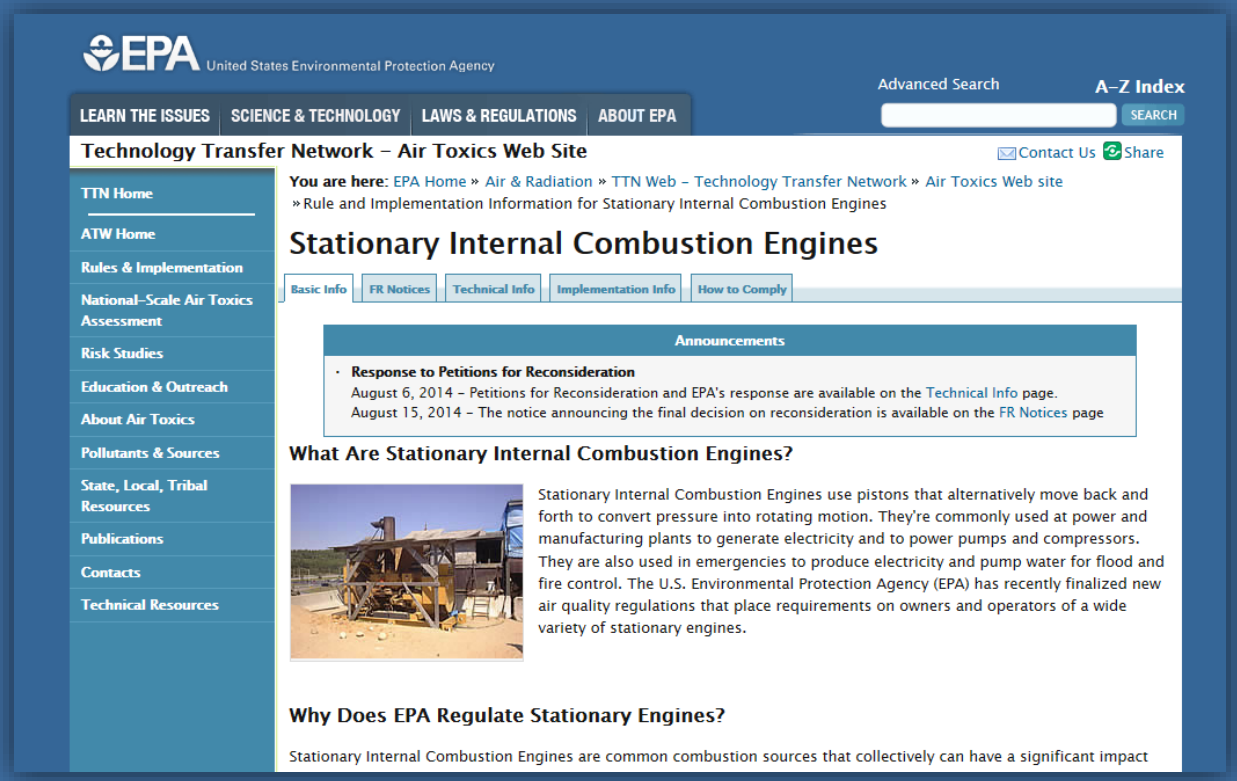
May 3, 2013

Photo credit: EPA

Visit the EPA RICE Compliance Page

http://www.epa.gov/ttn/atw/icengines/

- Fact sheets
- Regulations
- Example notifications
- Announcements
- Q & A documents
- Testing advice
- Recorded webinars
- …and more!



Take Aways

Engine Type:

•An existing emergency compression ignition engine at an area source with a site rating less than or equal to 500 horsepower

Standards:

•Change oil/filter (can use oil analysis program), inspect hoses and belts and replace as necessary every 500 hours or annually

•Inspect air cleaner every 1,000 hours or annually and replace as necessary

Monitoring:

•Operate/maintain engine according to manufacturer's instructions or develop your own maintenance plan

•Install a non-resettable hour meter

Take Aways

Compliance Requirements:

- Emergency hours of operation: no limit (unless subject to 22a-174-3b or 3c)
  - –Do not operate the engine for more than 30 minutes before an emergency condition is expected to occur; terminate engine operation immediately upon notification that the emergency condition is no longer imminent.

- 100 hrs/yr for:
  - –Maintenance and testing
  - –Demand response for Energy Emergency Alert Level 2 situations; and
  - –Responding to situations when there is at least a 5% or more change in voltage
  - –Operating for up to 50 hours to head off potential voltage collapse, or line overloads that could result in local or regional power disruption
- Starting in 2015, >15 hrs/yr for emergency demand response: use ULSD and submit annual report
- ≤15 hrs/yr for emergency demand response: no federal requirements
- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet non-emergency engine requirements

Recordkeeping:

- Record:
  - –Maintenance conducted
  - –Total hours of operation
  - –Hours of emergency operation (including what classified the operation as emergency)
  - –Hours of non-emergency operation (if allowed)
  - –Notification of emergencies and the time of operation during use for demand response, periods of deviation of voltage or frequency, and supplying power as part of a financial arrangement.

- Retain records for 5 years

Compliance Date:

- May 3, 2013